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West Virginia Agricultural Experiment Station.

MORGANTOWN, W. VA.

VEGETABLES.

By L. C. CORBETT.

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*Illustrated

Preface.

The experimental work upon which this bulletin is based was begun by Prof. F. W. Rane, who had charge of the work until a part of the harvesting was done, when he tendered his resignation to accept a position in another State. The notes begun under Prof. Rane, together with those taken after his departure, were offered to him for preparation in bulletin form, but he declined to work them up, owing to other pressing duties. I then requested his successor Prof. L. C. Corbett to tabulate and classify the results for publication. To Prof. Corbett, therefore, are due the deductions and conclusions published in this bulletin.

✓ : 4
Morgantown, January, 1896.

JOHN A. MYERS,
Director.

Introduction.

One of the many functions of the Experiment Station is the comparison or testing of varieties. It properly falls to the lot of the Experiment Station because no individual has either the time or money to expend in running trial grounds for his own private use. In a small way, however, every market gardener or seed grower must conduct such tests as those described in the following pages; for notwithstanding the care or completeness with which the Experiment Station carries on such work it can not fulfill the requirements of all individuals, soils and climatic conditions.

Each gardener possesses in his soil, exposure and altitude peculiarities which can only be determined by himself, and the fitness or unfitness of any given plant for that place must be decided after careful trial of that plant under the conditions there existing.

The Station can determine the comparative merits of the different varieties offered and can warn purchasers against inferior seeds and sorts.

Hereafter such tests will consist merely of those plants and vegetables offered as novelties, to determine if they possess points of superior excellence over varieties already upon the market, and to detect if possible old varieties under new names. In the past this has been a favorite resort of some seed dealers. An old or staple sort or even an inferior one with a high sounding name and a striking representation of the same upon the colored plate that usually accompanies our modern seed catalogues catches the eye of the prospective planter and he tries a packet at 25 cents, when an old well tried and perhaps a favorite would cost but ten.

Beware of the so-called novelties, until they have been tested and reported upon. The true novelty marks the advance of our art but the false one impedes progress.

So to planters, I would say, use only tested varieties and to seedsmen offer true 'novelties, after their character has been well fixed and their superior merits determined by actual test.

Variety tests, to be of the greatest value, must extend over a series of years, for it is a well known fact, that the sort that this season gave the best return may under the changed conditions of next season produce an inferior yield, even upon the same soil and in the same situation.

The results submitted in this report are based upon the observations of a single season and must, therefore, be taken as indicating probable rather than actual merits and demerits. If all seasons were alike then the work of one year would be as convincing as the average results of several, but such is not nature's method, hence the value of extended trials.

Bush Beans.

The color and quality of a bean when cooked is an important feature in selecting a variety either for market or home use.

The flavor must be determined by the individual who is to be satisfied, but the productiveness and earliness as well as the general appearance are questions for the grower rather than the cook.

In the following report the comparison is based on the results obtained from planting on May 1, fifty seeds of each variety.

In the column headed, "No. of plants matured," we have brought out not only the quality of the seed of each individual variety but a comparison of the several varieties. It will be noted that Nos. 61 and 66 matured the greatest number of plants but that the yield of snap or string beans was considerably below that of some other varieties.

In the column marked "Yield per plant in oz.," there is placed before us the average yield of a representative plant of that variety, thus all are placed upon an uniform basis for comparison. From a study of this column it is shown that No. 43 produced considerably more than any other variety. No. 6, one of the novelties of the season, produced the second largest yield, and No. 4 the third largest yield.

There was no very marked difference in the dates of edible maturity, two or three only varying from the common date July 15.

It is evident from the results here given that there is no correlation existing between the per centage germination of the seed and the resulting product. The quantity of the product is determined by the variety rather than the mode of culture.

BUSH BEANS, 1895.

Garden number.	Variety.	Seedsman.	Date of edible maturity.	Harvesting ceased.	Weight in lbs. of snap beans.	No. of plants matured.	Height of vine in inches.	Diameter of head.	Yield per plant in oz.	Color.
41	Imperial Red Valentine	Landreth	July 15	Aug. 18	8.3	35	8	6	3.8	Green.
31	Stringless Green Pod	Burpee & Co.	July 15	Aug. 18	7.1	34	9	11	3.3	Yellow.
38	Round Yellow six Weeks	Dreer	July 15	Aug. 10	7.3	37	8	12	3.1	Green.
42	Prolific Pickier	Vick's Sons	July 19	July 30	6.9	32	15	16	3.4	Green.
43	Wisconsin Tree	Everitt	July 19	Aug. 2	11.1	36	13	14	4.9	Green.
56	Longfellow	Henderson	July 15	Aug. 20	11.1	42	10	9	4.2	Green.
57	Six Weeks	Sa zer	July 15	July 24	4.6	39	11	8	1.9	Green.
58	Golden Eyed Wax	Barteldes	July 15	July 24	3.2	27	10	10	1.9	Yellow.
59	Davis Wax	Ferry	July 15	July 24	4.3	28	8	10	2.4	Yellow.
60	Wood's Earliest	Wood	July 19	July 24	3.7	24	7	10	2.9	Yellow.
61	Kenney's Rustless Wax	Johnson and Stokes	July 15	July 30	6.1	34	10	9	2.4	Yellow.
63	Yellow Six Weeks	Landreth	July 15	July 24	3.7	45	7	10	1.3	Yellow.
64	Extra Early Refugee	Landreth	July 15	July 30	6.8	38	9	11	2.8	Yellow.
65	Butter Wax	Maule	July 15	July 30	2.7	25	6	7	1.7	Yellow.
66	Kenney's Rustless Wax	Maule	July 15	July 30	6.9	45	10	9	2.4	Yellow.
67	Kidney Wax	Maule	July 15	July 30	3.7	36	10	11	3.0	Yellow.
68	Saddle Back Wax	Burpee	July 15	July 30	6.7	24	11	10	2.4	Yellow.
69	Rust Proof Wax	Buckbee	July 15	July 30	5.1	33	11	11	2.5	Green.
55	New Bush Lima	Henderson	Sep. 2	Sep. 2	3.0	40	12	13	1	Green.

Pole Beans.

Notwithstanding the fact that in a wild state all beans were climbers, the development and improvement of the bush sorts have caused it to almost completely take the place of the pole bean in the modern home garden.

The pole bean, however, possessed among its numerous representations one (the pole lima) that up to a very recent date had no rival among the bush beans. The introduction of the bush lima has rendered the pole lima less attractive and it is safe to predict that in the not far distant future the pole lima will be relegated to the same position as its other climbing relatives.

The appended table shows clearly the relative earliness and productiveness of the varieties tested. All were planted May 9th, and subsequently received the same treatment.

No. 74 produced the harvest yield among the common pole beans, and No. 30 the greatest among the limas. With one exception, the limas are all much later than the common pole beans. The long period required for properly maturing the limas has very materially restricted their area of cultivation, but if they are started in hot-beds or cold frames on pieces of inverted sods and transferred to the open air as soon as the weather will permit, the season is thus much lengthened and the plants come into bearing sooner and consequently yield a larger crop.

POLE BEANS.--1895.

Garden No	Variety	Seedsman.	Date of edible maturity.	Harvesting completed.	No. hills planted.	No. hills matured.	Yield in pounds.	Average yield per hill in pounds.
24	Kentucky Wonder.....	U. S. Dep. Agr.....	July 26.....	August 15..	21	20	58.0	2.9
29	Early Black Lima.....	Burpee.....	Sept. 2.....	Sept. 2.....	4	3	4.2	1.4
30	Horticultural Lima.....	Burpee.....	July 26.....	August 15..	17	17	36.5	2.15
70	Golden Andalusia.....	Curry Bros.....	August 7.....	August 27..	21	21	18.6	0.88
71	New Mastiff Golden Wax	Johnson & Stokes..	August 7.....	August 27..	21	21	62.4	2.96
72	Seibert's Early Lima.....	Ferry.....	Sept. 2.....	Sept. 2.....	3	3	4.6	1.34
74	Willing Pride.....	Salzer.....	July 26.....	August 27..	18	18	57.9	3.22
75	Philip's Am. Pickle.....	J. M. Philips.....	July 26.....	August 27..	21	21	44.0	2.09
80	Holstein.....	Buckbee.....	July 26.....	August 27..	21	21	41.0	1.95

Cabbage.

Cabbage, although the fact seems never to have been realized in the United States, is one of the so-called garden crops which has a very considerable value as stock food. While the tests recorded in this Bulletin were not made with a view of determining this fea-

ture, the yield of the several varieties will, nevertheless, indicate those varieties that can with profit be grown for this purpose. The one drawback to the cultivation of cabbage as stock food is the lack of knowledge of a cheap and efficient means of storing and keeping it for winter use.

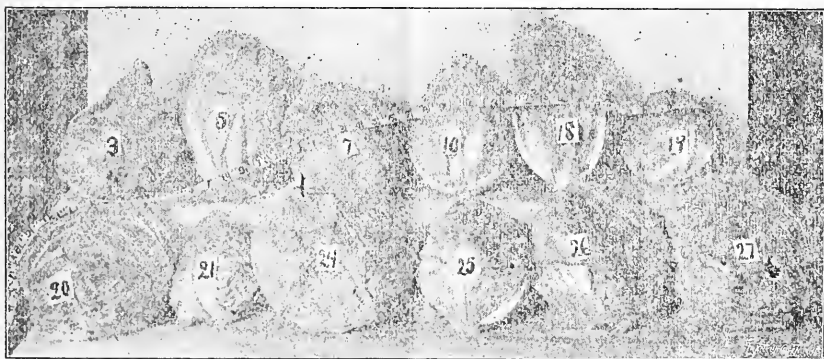
As a vegetable it adds very materially to the bill of fare, owing to the varied forms in which it is prepared. It is, therefore, one of the staple "truck" crops, and its cultivation gives occupation to a large number of persons in this country.

Generally speaking there are two crops of cabbage—the early and a late crop. In the States having a milder winter than we enjoy the early crop is most largely grown; while in the northern States the late crop largely predominates.

In the following tables *early* summer or medium and late varieties are considered. The tables explain themselves, when it is remembered that all the plants, the record of which appears in the first table under the head of first early cabbage, were grown from seed planted March 12; fifteen of the young plants being set in the garden on April 26.

Those spoken of under the head of second early or medium varieties were grown from seeds sown on April 8, the young plants eighteen in number being set in the garden on June 5, while the seed of the late varieties was sown on May 16, eighteen plants being transplanted to the garden July 3.

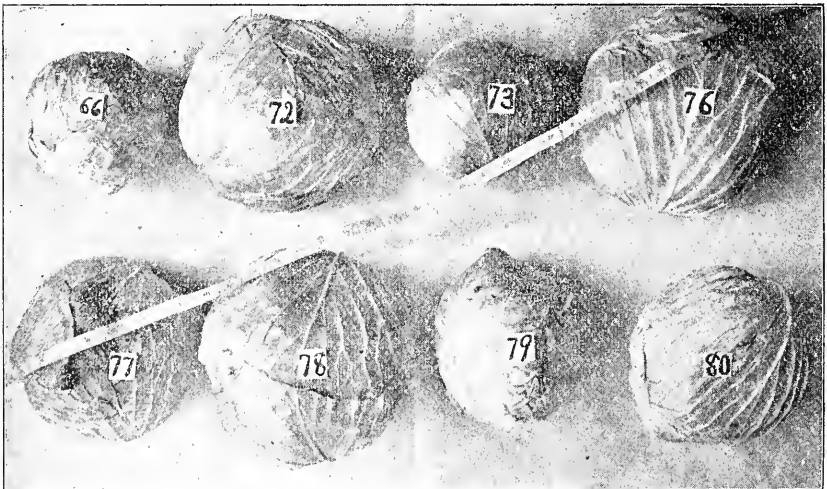
The protracted drouth of the latter part of the season very materially interfered with these plants, reducing the stand as well as the average size of the heads. This was to be expected, when it is remembered that cabbage is naturally a wet weather plant, *i. e.*, it is grown best in deep rich soil with an abundant water supply.



FIRST EARLY CABBAGE, CROP OF 1895.

FIRST EARLY CABBAGE.

Garden No.	Variety.	Seedsmen.	Harvesting commenced.	Harvesting ceased.	T' tal No. of heads.	Total weight in lbs.	Average weight of heads.	Average diameter of heads—Inches	Remarks.
3	Select Early Jersey Wakefield.....	Landreth.....	July 2	July 29	13	26 9	2 1	5 4-13	Tender and crisp, a good variety.
5	Landreth's Earliest.....	Landreth.....	July 2	July 29	13	37 0	2 9	6 4-13	
7	Early Summer.....	Landreth.....	July 2	July 29	9	24 6	2 7	6 4-13	
10	New Extra Early Express.....	Burpee.....	July 1	July 29	10	15 9	1 6	4 4-5	
14	Charleston Wakefield.....	Henderson.....	July 15	July 29	10	20 5	2 0	5 9-10	L'ge loose op'n hds. A very desirable variety.
18	Large York.....	Landreth.....	July 8	July 29	12	30 0	2 5	5 9-10	
19	Ox-Heart (Fr'nch).....	Landreth.....	July 2	July 29	14	36 6	2 4	6 9-10	
20	Reynolds Early.....	Livingstons Sons.....	July 2	July 29	15	44 9	3 0	6 9-10	
21	Early Jersey Wakefield.....	H. A. March.....	July 8	July 29	13	26 0	2 0	4 9-10	The largest and most tender variety grown.
23	Extra Early Ex-tampes.....	Barteldes.....	July 8	Aug. 9	10	21 9	2 1	5 9-10	
24	Market Gardeners No. 2.....	Johnson & Stokes.....	July 8	Aug. 14	9	59 8	6 6	10	
25	Valentine.....	Rawson & Co.....	June 26	July 29	11	24 9	2 2	6	
26	Early Spring.....	Henderson.....	July 2	Aug. 14	11	30 4	2 7	7 1-5	
27	Lightning.....	J. A. Salzer.....	July 8	July 29	13	45 2	3 5	8	



MEDIUM OR SUMMER CABBAGE, 1895.

SECOND EARLY CABBAGE.

Garden No.	Variety.	Seedsman.	Harvesting commenced.	Harvesting ceased.	Total No. of heads.	Total weight in lbs.	Average weight of heads in lbs.	Average diameter of heads in inches.
66	Bloomdale's Ey Market.....	Landreth.....	Aug. 21	Aug. 28	17	44.3	2.6	5.7
72	Henderson's Ey Summer.....	Ferry & Co.....	Aug. 21	Aug. 28	17	67.9	3.7	7.0
73	Ey Dwarf Flat Dutch.....	Ferry & Co.....	Aug. 21	Aug. 28	15	28.7	1.9	5.2
76	All Seasons.....	Northrup, B. G. & Co.....	Aug. 21	Aug. 28	17	63.1	3.7	7.6
77	Early All Head.....	Burpee.....	Aug. 21	Aug. 28	18	42.2	2.3	6.1
78	Henderson's Ey Summer.....	Henderson.....	Aug. 21	Aug. 28	18	75.8	4.2	8.0
79	Eclipse.....	Curry Bros.....	Aug. 21	Aug. 28	15	32.5	2.1	5.3
80	New Hard Heading Eclipse.....	Maule.....	Aug. 21	Aug. 28	17	23.9	1.4	6.1

LATE CABBAGE.

Garden No.	Variety.	Seedsman.	Harvesting began.	Harvesting ceased.	Total No. of heads.	Total weight in lbs.	Average weight of heads in lbs.	Average diameter of heads in inches.
140	Early Deen Head.....	Livingston.....	Oct. 23	Oct. 30	5	10.7	2.1	6.2
141	Gregory's Hard Heading.....	Livingston.....	Oct. 21	Oct. 30	4	8.3	2.1	7.0
142	Livingston's Ideal.....	Livingston.....	Oct. 26	Oct. 30	4	9.2	2.3	7.0
143	Burpee's Sure Head.....	Burpee.....	Oct. 21	Oct. 30	10	19.0	1.9	6.0
146	New Rock Heading Winter.....	Johnson & Stokes.....	Oct. 23	Oct. 30	11	21.9	2.0	6.3
148	Harvest Home.....	N. B. G. Co.....	Oct. 23	Oct. 30	7	11.4	2.1	6.0
149	Christmas King.....	Kuckbee.....	Oct. 23	Oct. 30	12	31.8	2.6	6.0
150	Autumn King.....	Henderson.....	Oct. 23	Oct. 30	10	20.1	2.0	6.0
151	Danish Round Winter.....	Vick's Sons.....	Oct. 23	Oct. 30	10	20.9	2.9	6.3
152	Christmas Drum Head.....	Burpee.....	Oct. 30	Oct. 30	4	4.9	1.2	4.0
153	The Lupton.....	Maule.....	Oct. 23	Oct. 30	4	8.4	2.1	6.5
154	Late Drum Head.....	Buist.....	Oct. 23	Oct. 30	10	17.2	1.7	6.0
155	Luxemburg.....	U. S. Dep. Agr.....	Oct. 23	Oct. 30	3	4.0	1.3	5.6
156	Hollander.....	U. S. Dep. Agr.....	Oct. 23	Oct. 29	6	13.2	2.2	6.0

Peas.

Peas are among our hardiest annual garden plants and the seeds may, therefore, be planted as soon in the spring as the ground can be worked. These remarks apply more particularly to what are known as the extra early variety; the later and larger growing sorts, particularly those of the wrinkled type, are more liable to injury by frost from early planting.

In growing peas either for home or market purposes a single

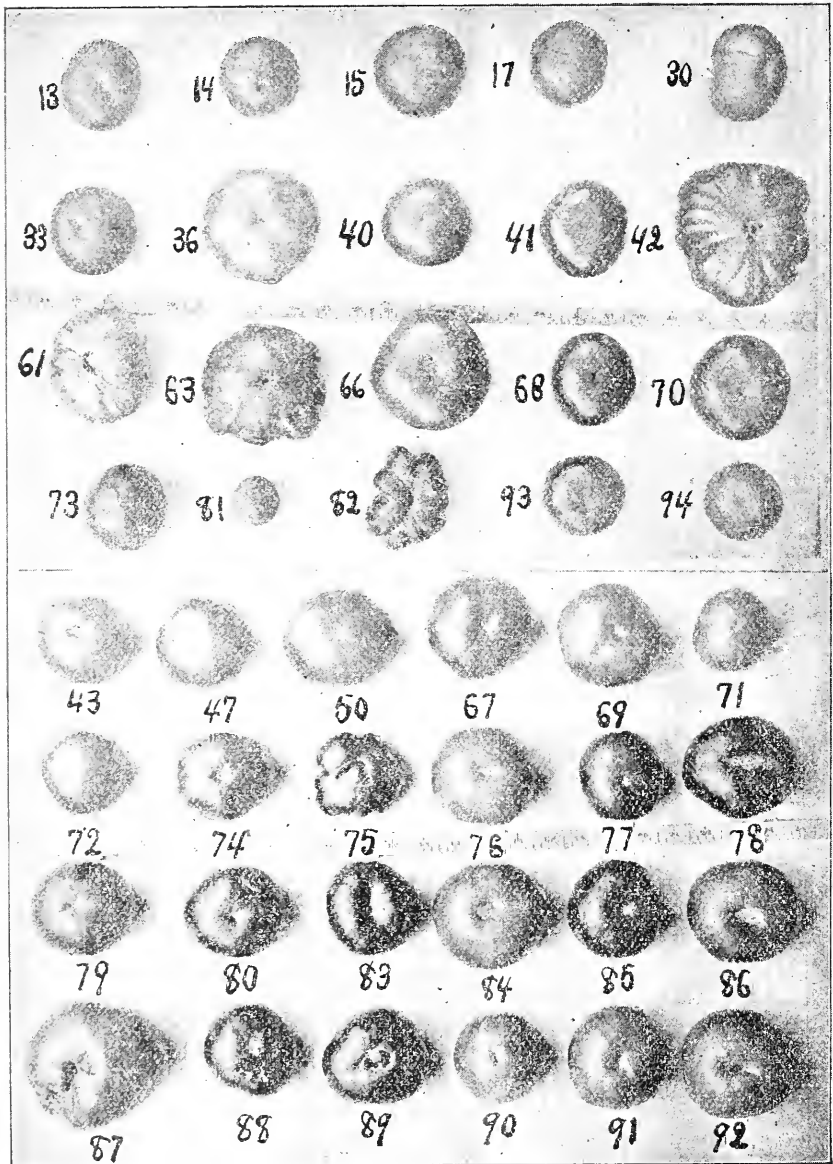
planting of any one kind should not suffice, neither should the planting of a selected trio of early, medium and late varieties be considered sufficient. Aside from the extra early there should be a succession of plantings of each of the varieties selected. These plantings should follow one another at intervals of from ten days to two weeks, by so planting a continuous supply is kept up without resorting to a long list of varieties, which by the way, do not offer a wide range for selection. In selecting varieties do not choose those that when mature have a smooth spherical white or straw-colored seed. There are too many hardy early wrinkled sorts now-a-days to content ourselves with the inferior quality and shorter period of edible condition of these hard seeded kinds.

From the subjoined record the relative periods of maturity, the yield, the height of vine and the form of the seed can be determined. These computations are based on results obtained from planting one hundred seeds of each variety in a clay loam on May 29, a very late date for obtaining best results from this vegetable which enjoys the moist, cool conditions of the early season.

In the column marked "Average yield per plant in ozs.," we have clearly brought out the value of the several varieties as fruit producers, No. 27 producing the largest crop and at the same time being one of the medium early maturing varieties, yet one giving a long period, fifteen days, for picking; No. 24 stands second, although a much later pea its advantage again seems to be in its long period of harvesting.

VARIETY OF PEAS COMPARED.

Garden No.	Variety.	Seedman.	Date of First Bloom.	Harvesting Commenced.	Harvesting	Number of plants matured.	Average number of peas per pod.	Yield in pounds.	Yield in pints.	Average yield per plant in ozs.	Height of vine in inches.	
5	Stratagem.....	Landreth.	June 17	July 18	July 27	67	6	1.2	3.5	.26	18	wrinkled.
6	Prize Gem.....	Landreth.	17	3	22	71	4	3.4	6.7	.62	8	wrinkled.
8	Pride of the Market.....	Landreth.	17	13	27	74	4	8.6	16.0	2.13	20	wrinkled.
12	Champion of England.....	Landreth.	17	12	27	67	5	4.9	10.0	1.20	36	wrinkled.
16	The Charmer.....	Vick's Son.	17	8	27	75	4	6.0	11.0	1.50	40	wrinkled.
19	Lightning Express.....	Buckbee.	17	14	27	44	8	4.7	11.5	1.71	25	smooth.
21	Burpee's Extra Early.....	Dreer.	1	15	27	43	5	1.8	5.5	.67	25	smooth.
23	Wm. Hurst.....	Burpee.	5 June	21	27	54	5	1.8	5.0	.53	7	wrinkled.
24	Renown.....	Burpee.	20 July	10	27	92	6	16.1	86.0	2.80	24	wrinkled.
25	The Echo.....	Burpee.	17	12	27	87	6	12.0	23.0	2.20	27	wrinkled.
26	Heroine.....	Henderson.	17	8	24	100	7	13.4	25.0	3.14	25	wrinkled.
27	Queen.....	Henderson.	17	13	27	97	8	13.0	27.0	3.17	33	wrinkled.
29	Sterling.....	U. S. Department Agr.	17	3	27	100	7	10.1	19.0	1.61	42	wrinkled.
30	June.....	Henderson.	17	8	24	95	7	12.9	19.0	2.17	22	wrinkled.
40	Early Morning Star.....	Robert Buist.	1 June	15	24	71	5	6.9	11.5	1.55	23	smooth.
41	Wood's Acme.....	Wood & Son.	17 July	8	27	98	6	16.9	32.0	2.76	32	wrinkled.
42	Earliest and Best.....	Salzer.	3 June	15	24	70	5	4.5	3.0	1.3	30	smooth.
43	June.....	Dreer.	17 July	3	24	85	6	10.0	19.0	1.88	21	wrinkled.
44	Chelsa Gem.....	Dreer.	17	3	24	85	6	3.9	8.0	.73	10	wrinkled.
45	Giant Poddied Marrow.....	Johnson & Stokes.	17	8	29	65	7	7.9	16.0	1.94	12	wrinkled.
46	Nott's Excelsior.....	Johnson & Stokes.	5 June	21	24	53	5	9.7	20.5	2.68	9	wrinkled.
47	New Golden, No. 80.....	Johnson & Stokes.	17 July	24	29	64	6	4.6	8.0	1.15	14	wrinkled.
48	Paragon.....	Barteldes.	17	3	24	70	6	6.4	13.0	1.41	14	wrinkled.
49	Bwarf Champion.....	U. S. Department Agr.	17	3	24	61	6	11.2	21.5	2.80	12	wrinkled.
50	Bishops Long Poddied.....	U. S. Department Agr.	5	8	24	63	6	4.0	7.0	.47	13	wrinkled.
51	Prize Taker.....	Dickinson.	17	8	29	65	5	8.5	17.5	2.09	15	wrinkled.
53	Breck's Excelsior.....	Breck & Sons.	17	15 June	24	62	5	3.1	7.0	.80	14	smooth.
53	New Life.....	Breck & Sons.	17 July	8	29	91	8	9.2	20.0	1.61	20	wrinkled.
54	Extra Early Challenge.....	Curry Bros.	3 June	15	24	68	5	3.8	9.5	.87	16	small wrinkled.
55	New Station.....	Thorburn.	3 June	14	24	47	4	1.3	4.0	.44	14	wrinkled.
56	Dwarf Wrinkled Sugar.....	Thorburn.	3	21	24	59	4	1.8	4.0	.49	5	wrinkled.
57	Clipper.....	Rawson.	5	11	24	61	1	2.2	5.5	1.44	20	small green wrinkled.
58	Nott's Excelsior.....	Burpee.	3	21	24	56	3	1.4	3.0	.40	5	wrinkled.
59	Burpee's Best.....	Burpee.	3	14	24	70	4	2.3	4.0	.52	13	wrinkled.
60	First and Best.....	Nebraska Seed Co.	3	15 July	24	65	4	3.6	9.0	.90	23	smooth.



TYPICAL FORMS OF VARIOUS TOMATOES GROWN IN 1895.

The numbers correspond with those of the table on pages 224 225.

Tomatoes.

The cultivation of the tomato in this climate is not more uncertain than that of corn; yet with a little care and an understanding of the handling of the young plants one may so hasten the maturity of the fruit as to enable him to place the product in the market several days in advance of his competitors—thus giving him the benefit of southern prices and a free market.

The earlier the seeds are sown, within certain limits, the earlier the plants come into bearing.

The construction of hot-beds and cold-frames is so simple and cheap nowadays, that the market gardeners can not afford to delay his crop, thus losing first prices, by not keeping up with the times in the methods of growing tomato plants. Such plants find a ready sale among one's neighbors and in a single season, the first cost of the sash for the construction of hot-beds and cold-frames will often be made good from the sale of plants alone, to say nothing of the benefit to one's self. Young plants started from early sown seeds should be kept stocky and thrifty; slow grown rather than quickly grown plants are best for outside planting. A great advantage is also obtained by growing the plants for the early crop in tomato cans or in pots. Old tin tomato or vegetable cans can be had from any refuse heap and if the top and bottom be melted off, the portion forming the side of the can melted apart, thus leaving a hollow tin cylinder like a cuff, open on one side without top or bottom; tie a string around this, and you have a cheap and convenient receptacle for all sorts of plants, but particularly for tomatoes. When ready to transfer these to the field slip a piece of sheet iron, a shingle will do, under the bottom of the can. Transfer it to a wheelbarrow or carrying flat. When ready to set the plants cut the cord, this allows the tin to spring away from the ball of earth, thus leaving the roots in contact with the soil and allows them to be transplanted without exposure which retards the plants. Tomato plants grown in this way may be set while in bloom, or even after fruits have set without danger of losing the advantage of the first bloom; and secondly, they may be kept under cover until the danger of frost at night is passed. To get early fruits it is not necessary that the plants be set in the field earlier than usual, but that the seeds be sown early and the plants handled as above indicated.

To make the work still more complete the earlier maturing varieties should be selected; provided, of course, that they return a remunerative crop. To aid in the selection of varieties, and to serve as an index to prospective, as well as experienced growers of this fruit, the following table showing the results of the tests of 1895 is here presented.

This table gives at a glance the comparative merits of the various sorts, noting those that have produced largest yields, for the season as well as up to Sept. 1st. The yield to this date seems to indicate the relative earliness of the several varieties, the one pro-

ducing the greatest yield to Sept. 1st., other things being equal, may be considered to be the earliest variety. From yield per plant, as well as from the rate of yield per acre, we have a basis for judging the cropping values of the several varieties. By referring any variety by the garden number to the corresponding number upon the photograph the form of the fruit is readily seen. The yield, size of fruit and proportion of rot as noted in the table are not sufficient to convince one of the value of a variety for an ugly form coupled with all the other desirable qualities may render the fruit unsalable in a market demanding a smooth tomato. All of the varieties recorded in the accompanying table were planted on March 11 and 12, unless otherwise noted, and were set in the field May 8 and 9.

On May 12th a frost occurred which cut off the early bloom and in a few instances destroyed the plants. Nearly all recovered, however, and, although retarded in their time of maturity, made a good showing.

For some unknown cause that portion of the patch containing those varieties bearing numbers less than 83 were most seriously frozen, and for that reason any apparent advantage shown by numbers 83 to 94 inclusive, may be, in a measure, due to injury from the frost.

TOMATO VARIETIES COMPARED.

Record No.	Variety.	Seedsman.	Date of first ripe fruit.	No. of plants.	Total No. ripe fruits.	Total weight of ripe fruit in pounds.	Average wt. of fruits per plant in pounds.	Total No. rotten fruits.	Total weight rotten fruits in pounds.	Total weight of green fruit in pounds.	Total weight of fruits in pounds.	Average weight of individual ripe fruits in ounces.	Average No. of ripe fruits per plant.	Average No. of rotten fruits per plant.	Average No. ripe fruits per plant up to September 1st.	Rate of yield of ripe fruits (2722 plants) per acre, in bushels, for the season.
13	Dwarf Champion.....	Livingston's Sons.....	Aug.	19	261	23.8	3.6	15	1.4	.....	30.2	1.76	33	2	5.5	163.32
14	Beauty.....	Livingston's Sons.....	.....	5	102	25.2	5.0	32	4.0	7.5	37.4	4.00	20	6	5.2	226.83
15	Buckeye State.....	Livingston's Sons.....	.....	16	333	88.0	8.8	89	9.6	15.2	97.6	4.14	34	9	6.1	839.23
17	Dwarf Aristocrat.....	Livingston's Sons.....	.....	23	10	67.4	7.5	35	4.6	16.7	84.1	3.36	35	4	10.3	310.65
30	Fordhook First.....	Burpee & Co.....	.....	10	9	37.4	9.6	63	8.8	11.5	43.9	2.72	55	16	18.7	433.52
33	New Tree.....	Buckbee W. H.....	.....	14	4	34.2	8.5	14	1.2	11.6	45.7	3.52	38	8	7.7	385.62
36	Henderson's Ponderosa.....	Henderson.....	.....	21	4	53.7	8.6	4	0.9	55.0	108.7	8.56	13	1	4.0	390.15
40	Bruton's Best.....	Johnson & Stokes.....	.....	23	6	96	8.2	2	0.6	7.6	24.1	6.40	20	1	2.0	372.01
41	The Liberty Bell.....	Johnson & Stokes.....	.....	26	9	16.5	8.2	2	0.6	7.6	24.1	6.40	20	1	2.0	372.01
42	Ringleader.....	Dreer, H. A.....	.....	8	725	138.8	11.5	174	26.1	25.0	163.8	3.04	60	14	21.0	521.72
47	Pen-Ton Tomato.....	Landreth.....	.....	10	6	181	16.5	14	3.4	31.0	123.4	3.61	31	2	6.6	748.55
50	Baltimore Prize Taker.....	Landreth.....	.....	14	718	125.3	11.4	180	21.3	31.0	136.3	2.72	65	13	23.3	517.18
60	Beefsteak.....	Station.....	.....	8	11	578	109.2	9.9	21.2	19.0	128.2	3.04	53	13	22.1	449.13
63	The Autocrat.....	Thorburn.....	.....	26	3	93	24.3	9.7	1.3	1.5	30.7	5.12	31	2	3.3	440.06
66	The Democrat.....	Thorburn.....	.....	19	9	258	114.8	12.7	8	28.0	142.8	7.01	29	1	5.6	576.16
67	The Aristocrat.....	Thorburn.....	.....	16	6	232	60.6	10.1	9.9	11.2	71.8	4.16	33	12	10.8	458.20
69	Truher's Favorite.....	Burpee & Co.....	.....	19	8	339	61.7	8.1	18	12.5	77.2	3.04	42	2	8.1	367.47
70	New Jersey.....	Dickman, J. F.....	.....	16	12	487	110.2	9.1	78	26.0	136.2	3.63	41	15	14.5	412.84
71	Bound's Eye, Minnesota.....	Gregory & Sons.....	.....	16	8	363	107.0	13.3	83	23.3	131.0	4.61	45	10	12.1	603.38
72	The Comrade.....	Gregory & Sons.....	.....	14	10	629	81.0	11	1.3	15.2	93.1	2.08	43	1	21.6	367.47
73	Belmont.....	Breck & Sons.....	.....	14	8	343	83.1	10.4	14.5	15.0	98.1	3.35	49	9	13.8	471.81
4	Golden Prize.....	Buckbee.....	.....	14	10	664	64.6	6.4	123	20.1	81.6	1.61	66	13	13.6	290.35
75	Earliest of All.....	Vaughn, J. C.....	.....	12	12	561	68.7	5.7	28	17.6	83.3	3.04	30	2	7.6	258.59
76	Pott's Choice Canner.....	Wood & Sons.....	.....	8	7	531	71.6	10.2	13	1.4	58.6	2.04	76	2	55.0	462.71
77	Atlantic Prize.....	Barbides.....	.....	14	10	522	86.6	8.6	132	19.6	103.2	2.72	52	13	20.7	399.2
78	Prize Belle.....	Buist, Robert.....	.....	12	11	471	96.8	8.8	9	13.5	110.3	3.34	43	1	24.0	399.2
79	The Majestic.....	Buist, Robert.....	.....	16	10	356	42.6	4.2	121	15.5	61.9	1.92	36	12	13.9	190.54
80	Puritan.....	Rawson.....	.....	19	6	241	49.5	8.2	47	8.1	65.0	3.36	40	8	12.1	372.01
81	New Peach.....	U. S. Dep Agr.....	.....	14	11	497	95.9	8.7	178	25.4	122.9	3.04	45	16	17.5	281.69
82	The Tree.....	U. S. Dep Agr.....	.....	16	10	466	62.6	6.2	0	19.0	81.6	2.68	47	0	15.5	281.69
83	Maul's Earliest.....	Mane.....	.....	14	10	322	82.3	8.2	8	17.6	93.9	3.36	39	1	14.0	372.01
84	New Imperial.....	Maude.....	.....	8	10	333	73.5	7.9	17	14.3	93.8	3.33	38	2	29.1	338.40
81	New Imperial.....	Maude.....	.....	12	10	450	117.0	11.7	56	16.4	133.4	4.16	45	6	26.6	530.79

TOMATO VARIETIES COMPARED.—Continued.

Record No.	Variety.	Seedsman.	Date of first ripe fruits.	No. of plants.	Total No. ripe fruits.	Total weight of ripe fruit in lbs.	Average wt. of fruits per plant in pounds.	Total No. rotten fruits.	Total weight rotten fruits in pounds.	Total weight of green fruits in pounds.	Total weight of fruit in pounds.	Average weight of individual ripe fruits in ounces.	Average No. of ripe fruits per plant.	Average No. of rotten fruits per plant.	Average No. of ripe fruits per plant up to September 1st.	Rate of yield of ripe fruits (2722 plants) per acre, in bushels, for the season.
85	New Ey. Tomato No. 100	Johnson & Stokes	Aug.	6	378	79.1	7.9	136	31.6	11.6	90.7	3.36	38	19	18.9	358.49
86	Optimus	U. S. Dep. Agr.		9	414	100.4	11.1	61	9.3	18.7	119.1	3.68	49	7	39.1	501.57
87	Ferris Wheel	Salzer		6	231	82.7	8.3	9	1.4	6.3	89.0	5.76	23	1	12.8	375.54
88	First Prize	Salzer		6	790	102.7	12.8	5	.4	8.2	110.8	2.08	99	1	56.0	540.69
89	Earliest of All	Salzer		6	482	86.2	8.6	5	.4	5.0	91.2	2.83	48	1	36.7	390.15
90	Golden Glory	Salzer		14	591	145.3	14.5	20	3.2	11.5	156.8	4.00	59	2	30.7	657.82
91	Morning Star	Salzer		10	386	29.7	9.9	21	4.9	6.1	105.8	4.16	39	59	27.0	449.13
92	Giant Tree	Salzer		8	252	108.5	12.0	16	3.4	0.0	108.5	6.88	28	28	11.5	544.40
93	McCullom's Hyb	Vick's Sons		14	499	98.8	9.8	95	16.1	15.2	114.0	3.20	50	50	25.5	441.59
94	Long Keeper	Nab. Seed Store		14	602	137.9	15.3	21	3.9	9.8	147.7	3.20	77	77	35.0	634.11

Treatment of Plants to Prevent Rot.

For this experiment a uniform lot of plants were selected. All received the same cultivation, were grown from seed planted Feb. 20th, and plants set in the field on April 29th.

The patch was divided into three plats; the plants of one received a spraying of Bordeaux Mixture on May the 3, 9, 16, June 7, July 6 and 16 respectively.

A second plat was mulched about two inches deep with straw on June 11th. This was to prevent the growing and maturing fruits from coming in contact with the soil.

A third set was left without either the straw mulch or the Bordeaux Mixture treatment.

From the table here given the history of each plat can readily be seen. The earliness is represented by the average number of fruits borne by the different sets to Aug. 15, and Sept. 1, and the productiveness both by the number and weight of the fruits for the season.

As regards the prevention of rot the straw mulch, a very simple and cheap remedy, seems from this season's observation to be more efficient than the chemical fungicide - the Bordeaux Mixture. If this proves to be the case after further experiment, holding this disease in check is reduced to a simple basis. Further tests during years of varying atmospheric conditions are necessary before decided results can be announced. The work here presented is merely suggestive, and it is hoped, that all tomato growers will try the mulch and report their results to the station.

TREATMENT TO PREVENT ROT.

Method of Treatment.	No. of plants.	Total No. of fruits.	No. of fruits per plant.	Weight of fruits per plant—lbs.	No. fruits per plant to Aug. 15.	No. fruits per plant to Sept. 1.	Average weight of ind. fruits.	Percentage of rot.
Sprayed with Bordeaux Mixture	55	3754	68	18.2	21	64.3	.24	.078
Mulched with straw.	25	1555	62.2	20	16	57.9	.32	.035
Normal.....	25	1845	73.8	20	21.8	69.6	.27	.039

Tomato Training.

For this test uniform plants of Livingston's Beauty were selected. All were planted in the field on April 29th and were subsequently treated alike except that the plants of one portion, 22 in number, were trained in a trellis made of two barrel hoops fastened, one above the other, to narrow staves driven into the ground.

A second set of 30 plants had the main branches tied to a stake about 2½ feet tall, as the plants grew they were tied as often as was necessary to keep the fruits off the ground.

A third lot of 35 plants were supported on brush, trimmings from the apple orchard. The brush was placed upon the ground and the plants allowed to fall over upon it at will.

From the summarized results presented in the table we see that the plants trained in the hoops were considerable earlier than the others, but that this earliness was dearly paid for in a lessened product for the season. Every thing considered the brush gave the best results. For it is less expensive to provide, and the greatest number of fruits as well as corresponding weight render it best, unless the higher price for extra early fruits will more than compensate for the lessened product and greater expense of the other forms of training.

TOMATO TRAINING.

Treatment	No. of plants.	Average No. fruits per plant.	Average weight of fruit per plant in pounds.	Avg. No. of fruits per plant to Sept 12.	No. of rotten fruits per plant	Wt. of rotten fruits per plant in lbs.
Hoops	22	11.6	3.9	6.76	.7	.17
Stakes	30	12.3	4.5	5.80	.33	.07
Brush	35	15.7	6.4	6.14	1.80	.5

